

OKUMURA et al
Serial No. (to be assigned)

from a group consisting of cerium, lanthanum, yttrium, neodymium and praseodymium, and at least one element selected from a group consisting of manganese, iron, cobalt, nickel, copper and zinc;

B1 setting an exhaust-gas temperature in a range of 200°C to 700°C at an inlet to the catalyst; and

directing an exhaust gas from an internal combustion engine to pass through the catalyst for purifying exhaust gas so as to reduce hydrocarbons, carbon monoxide and nitrogen oxides in the exhaust gas from the internal combustion engine.

REMARKS

Claims 1 through 4, 10 through 19 and 24 through 27 are pending in this application. The above amendments are made to place the claims in a more traditional format.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By:



Jeffry H. Nelson
Reg. No. 30,481

JHN:maw
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100

IN THE CLAIMS:

Amend the claims as follows:

1. A catalyst for purifying exhaust gas comprising iridium and sulfur as catalyst active substances.
 2. The catalyst for purifying exhaust gas as defined in claim 1, wherein iridium is deposited on a support containing sulfur.
 3. The catalyst for purifying exhaust gas as defined in claim 1, wherein sulfur is provided as a sulfate.
 4. A catalyst for purifying exhaust gas comprising:
a fire-resistant inorganic compound having at least one element selected from the group consisting of platinum, palladium and rhodium deposited thereon; and
a metallic sulfate having iridium deposited thereon.
-
10. (Amended) A catalyst for purifying exhaust gas comprising:
iridium, a rare-earth metal oxide, and sulfur; and
at least one element selected from [the] a group consisting of calcium,
strontium and barium, as catalyst active substances,
wherein the iridium forms a complex oxide with said at least one element.

11. The catalyst for purifying exhaust gas as defined in claim 10, wherein iridium forms a complex oxide with said at least one element selected from the group of said elements.

12. The catalyst for purifying exhaust gas as defined in claim 10, wherein iridium is deposited on a support containing sulfur.

13. The catalyst for purifying exhaust gas as defined in claim 10, further comprising a fire-resistant inorganic compound.

14. (Amended) A catalyst for purifying exhaust gas comprising iridium, a rare-earth metal and sulfur, and

wherein the rare-earth metal is contained as an oxide containing at least one element selected from a group consisting of cerium, lanthanum, yttrium, neodymium and praseodymium.

15. The catalyst for purifying exhaust gas as defined in claim 14, wherein the rare-earth metal is contained as an oxide containing at least one element selected from the group consisting of cerium, lanthanum, yttrium, neodymium and praseodymium.

16. (Amended) [The] A catalyst for purifying exhaust gas [as defined in claim 14,] comprising iridium, a rare-earth metal and sulfur, wherein the rare-earth metal is contained as a composite oxide containing at least one element selected from [the] a

group consisting of cerium, lanthanum, yttrium, neodymium and praseodymium, and at least one element selected from [the] a group consisting of manganese, iron, cobalt, nickel, copper and zinc.

17. The catalyst for purifying exhaust gas as defined in claim 14, further comprising at least one element selected from the group consisting of tin, gallium, germanium and silicon.

18. (Amended) An exhaust-gas purifying process comprising the steps of:
preparing [any one of the] a catalyst[s] for purifying exhaust gas[according to claims 1 to 17] by forming the catalyst of iridium, a rare earth metal oxide, and sulfur; and at least one element selected from a group consisting of calcium, strontium and barium, as catalyst active substances, wherein the iridium forms a complex oxide with said at least one element;

setting [the] an exhaust-gas temperature in [the] a range of 200°C to 700°C at [the] an inlet [of] to the catalyst for purifying the exhaust gas; and
[allowing] directing the exhaust gas from an internal combustion engine [to pass] through the catalyst for purifying the exhaust gas so as to reduce nitrogen oxides in the exhaust gas.

19. (Amended) An exhaust-gas purifying process comprising the steps of:

preparing [any one of the] a catalyst[s] for purifying exhaust gas [according to claims 4 to 9] by forming the catalyst of iridium, a rare earth metal oxide, and sulfur;
and at least one element selected from a group consisting of calcium, strontium and
barium, as catalyst active substances, wherein the iridium forms a complex oxide with
said at least one element;

setting [the] an exhaust-gas temperature in [the] a range of 200°C to 700°C
at [the] an inlet [of] to the catalyst for purifying the exhaust gas; and

[allowing] directing the exhaust gas from an internal combustion engine [to pass] through the catalyst for purifying the exhaust gas so as to reduce hydrocarbons, carbon monoxide and nitrogen oxides in the exhaust gas from the internal combustion engine.

24. An exhaust-gas purifying process comprising the steps of:

preparing a catalyst comprising iridium, a rare-earth metal and sulfur,
wherein the rare-earth metal is an oxide containing at least one element selected from a group consisting of cerium, lanthanum, yttrium, neodymium and praseodymium;

setting an exhaust-gas temperature in a range of 200°C to 700°C at an inlet to the catalyst for purifying exhaust gas; and

directing an exhaust gas from an internal combustion engine through the catalyst to purify the exhaust gas and reduce nitrogen oxides in the exhaust gas.

25. An exhaust-gas purifying process comprising the steps of:

preparing a catalyst comprising iridium, a rare-earth metal and sulfur,
wherein the rare-earth metal is an oxide containing at least one element selected from a group consisting of cerium, lanthanum, yttrium, neodymium and praseodymium;

setting an exhaust-gas temperature in a range of 200°C to 700°C at an inlet to the catalyst; and

directing an exhaust gas from an internal combustion engine to pass through the catalyst for purifying exhaust gas so as to reduce hydrocarbons, carbon monoxide and nitrogen oxides in the exhaust gas from the internal combustion engine.

26. An exhaust-gas purifying process comprising the steps of:

preparing a catalyst comprising iridium, a rare-earth metal and sulfur,
wherein the rare-earth metal is a composite oxide containing at least one element selected from a group consisting of cerium, lanthanum, yttrium, neodymium and praseodymium, and at least one element selected from a group consisting of manganese, iron, cobalt, nickel, copper and zinc;

setting an exhaust-gas temperature in a range of 200°C to 700°C at an inlet to the catalyst for purifying exhaust gas; and

directing an exhaust gas from an internal combustion engine through the catalyst to purify the exhaust gas and reduce nitrogen oxides in the exhaust gas.

27. An exhaust-gas purifying process comprising the steps of:

preparing a catalyst comprising iridium, a rare-earth metal and sulfur, wherein the rare-earth metal is a composite oxide containing at least one element selected from a group consisting of cerium, lanthanum, yttrium, neodymium and praseodymium, and at least one element selected from a group consisting of manganese, iron, cobalt, nickel, copper and zinc;

setting an exhaust-gas temperature in a range of 200°C to 700°C at an inlet to the catalyst; and

directing an exhaust gas from an internal combustion engine to pass through the catalyst for purifying exhaust gas so as to reduce hydrocarbons, carbon monoxide and nitrogen oxides in the exhaust gas from the internal combustion engine.